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09/405,031	09/24/1999	DOUGLAS R. COFFLAND	IL-10360	9034
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LLOYD E DAKIN JR ASSISTANT LABORATORY COUNSEL LAWRENCE LIVERMORE NATIONAL LABORATORY P O BOX 808-L-703 LIVERMORE, CA 94551			EXAMINER BETTT, JACOB F	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/405,031  
Filing Date: September 24, 1999  
Appellant(s): COFFLAND, DOUGLAS R.

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Eddie E. Scott  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 24 September 1999 appealing from the Office action mailed 14 August 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: There is only one grounds of rejection given under 35 USC §112, second paragraph. Appellant has separated this rejection into two separate sections, however, the claims were found indefinite for failing to particularly point out and

distinctly claim the subject matter which the Appellants regard as the invention because the were found to be omitting essential steps.

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

#### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

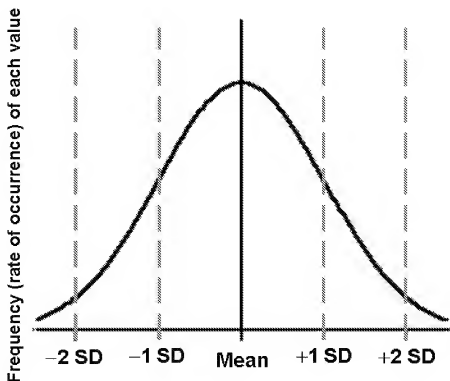
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 10, 17, and 24 recite limitation “random noise being unpredictable from one moment to the next”. This limitation is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art, at the time the application was filed, had possession of the claimed invention. The specification states, “in one embodiment of the present invention, the media signal need only include random transducer noise having a noise signal amplitude”. One example of how this can be done is “a lens-cap could be on the camera causing the scene to be perfectly quiescent.” By putting the lens-cap on the camera the signal becomes more predictable, not “unpredictable” as claimed by the applicant. This is because the output of the camera signal when capturing a chaotic signal has two somewhat unpredictable signals added together to make a more unpredictable signal (i.e.,  $\text{Chaotic}_{\text{SIGNAL}} + \text{Noise}_{\text{signal}} = \text{Signal}$ ). The chaotic signal has more effect on the change in the quantized sample because the amplitude of a camera is going to have a much higher signal for the image captured by the camera than the noise produced by the camera. The chaotic signal would change several quantization levels when the image being captured is changed whereas if the quantization levels of the camera were set at a level close to the amplitude of the noise, as suggested by the specification, the quantized sample would only vary slightly (1-2 quantization levels) from the chaotic signal being captured. Therefore if the chaotic signal was replaced with a predictable signal by putting the lens-cap on, the resulting signal would be more predictable than before because the only changing data in the signal would be the noise from the transducer (camera), which only varies by a few quantization levels.

The random noise that is part of the claimed media signal is “white Gaussian noise” as disclosed in the specification. This noise is not “unpredictable” as claimed by the applicant

because Gaussian noise is predictable based on the Gaussian Curve an example of which is shown below.



The graph shows that values that are closer to the mean are more likely to occur over time than values further away from the mean. Therefore “white Gaussian noise” is not “unpredictable” as currently recited in the claims.

The specification states, “Thus, even a perfectly quiescent media signal 104 (e.g., when a lens cap is on a video camera containing the transducer 102) will contain *some randomness* from the transducer noise.” The applicant’s specification then states, “Put another way, as long as a size of a smallest quantizer step is no larger than an amplitude of the transducer 102 noise, the quantized media signal 108 will include a *high level* of randomness even if input to the transducer is perfectly quiescent.” The applicant does not disclose: the steps required to go from

“some randomness” to “high level of randomness”; and from “high level of randomness” the steps required to go to “random noise only” and being “unpredictable”.

Further proof that the media signal disclosed in the specification does not contain data that is “unpredictable” is the compression and hashing steps that following the acquisition of the signal that is claimed to be “unpredictable”. These steps as disclosed by the specification are used to reduce the predictability of the keyword generated. The compressed data stream is used to remove redundant data strings so that only differences between data frames are presented, and because frames of a compressed media signal can vary in size, sets of data can easily be taken from different parts of the frames, helping to limit the amount of redundant data collected. The hashing step is used because it “assures that the resultant identifier 311 varies significantly even if the set of data 309 only varies by one bit.” If the data that was acquired originally was completely random and unpredictable, there would be no reason to go through these steps.

Claims 2-9, 11-16, 18-23, and 25-30 are rejected for depending on independent claims 1, 10, 17, and 24.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, elements or instructions. See MPEP § 2172.01. The preamble of claims

1 and 17 state “a system adapted for use for multimedia encryption”. The preamble of claim 10 states “a method adapted for use for multimedia encryption”. The preamble for claim 24 states “a computer-usable medium embodying computer program code adapted for use for multimedia encryption”. However the steps, elements, or instructions of the claims disclose creating a keyword. The claims omit the steps, elements, or instructions of actually encrypting any multimedia data.

Claims 2-9, 11-16, 18-23, and 25-30 are rejected for depending on independent claims 1, 10, 17, and 24 and for omitting the same steps, elements, or instructions that the independent claims omit.

#### **(10) Response to Argument**

##### **Argument Relating to Grounds of Rejection #1**

In response to Appellant’s arguments that the applicant’s specification teaches “random noise being unpredictable from one moment to a next”, the arguments have been considered, but are not deemed persuasive. The applicant’s specification only gives one example of “random noise” and that example is white Gaussian noise. By definition Gaussian noise is noise that has a probability density function that follows Gaussian distribution, an example of which can be found in the 35 U.S.C §112 first paragraph rejection given above. It is the words “random noise being unpredictable from one moment to the next” that are an issue as it is agreed that white Gaussian noise is not chaotic. However, white Gaussian noise is not “completely unpredictable” either as values closer to the median are more likely to occur.



In the Final Office Action, in the response to arguments it was stated that if the applicant made a statement that what is meant by “random noise that is unpredictable from one moment to the next and not being chaotic noise” is actually white Gaussian noise, the 35 U.S.C §112 first paragraph rejection would be withdrawn. Appellant fails to address these or any of the other comments made in this part of the Final Rejection. In fact if the applicant read and responded to the examiner's comments, it is believed that this appeal could have easily been avoided.

The importance of what is meant by “random noise being completely unpredictable” is of great importance because the difference between the noise source in this application and that which is found in much of the prior art (including Noll et al., US patent No. 5,732,138; Borza et al., US patent No. 6,215,874 B1; and Koopman, Jr., 5,757,923) is the fact that the this source includes “random noise being completely unpredictable”. Appellant's failure to address this issue of what is meant by random noise raises the issue of whether or not there is actually a source that can produce the signal Appellant is claiming.

In response to Appellant comments directed towards who “a person skilled in the art” is, these comments are not helpful as they do not make any reference to how the specification would be interpreted to one of ordinary skill in the art. The rejections do not intend to state that the inventor Mr. Douglas R. Coffland is not skilled in the art, and therefore proof that he is skilled in the art is unnecessary.

Further the applicant states, “the lead inventor, Douglas R. Coffland, is Division Leader-Security Engineering and Computational Division of the Lawrence Livermore National

Labortory". It is noted that according to the application file Mr. Coffland is not just the lead inventor but the only inventor.

In response to the Appellant comments regarding the strong presumption that an adequate written description is present, the arguments have been considered, but are not deemed persuasive. As noted previously, although there is a strong presumption that an adequate written description of the claimed invention is present when the application is filed, once an issue is raised with regards to the specification, it cannot simply be ignored. If an inventor was to submit an application claiming a perpetual machine, one would not simply assume the written description in that application was enabling. Assuming such a thing would go against the laws of physics. Similar in this circumstance one cannot simply assume that a signal is going to be completely unpredictable from one moment to the next because the specification states this.

As noted above, if the signal coming from the transducer noise was completely unpredictable there would be no need to compress and hash the signal as the signal itself could be used to produce random numbers. These compression and hashing steps are performed to make the signal more random.

#### **Argument Relating to Grounds of Rejection #2**

In response to the applicant's arguments in this section of the brief it is believed that the applicant misunderstood the examiner's rejection as the claims are being rejected as being indefinite because they are missing steps. The applicant addresses the missing steps part of this rejection in Argument #3, and the examiner will respond to these arguments in this section.

### **Argument Relating to Grounds of Rejection #3**

In response to the Appellant's arguments directed towards the 35 U.S.C. § 112 second paragraph rejection stating that the claim is directed towards "a system adapted for use for multimedia encryption", "a method adapted for use for multimedia encryption", or "a computer-usable medium embodying computer code adapted for use for multimedia encryption", the arguments have been considered, but are not deemed persuasive. Appellant has failed to point to any step in the claim that results in multimedia encryption as required by the preamble. Therefore the claims are deemed to be missing this step/element of multimedia encryption.

Appellant fails to address either of: a) why the appellant feels that multimedia encryption is obtained or b) why the appellant feels that the preambles do not require the step of multimedia encryption. Appellant merely reiterates the claim limitations and does and as with the 35 U.S.C. §112 first paragraph rejection above fails to fully address the actual meat of the rejection being given and the comments that the examiner is making in the "Response to Arguments" section of Final Office Action.

As noted in past actions the preamble of the claim is not addressing what is actually occurring in the claim which is the generation of a keyword. The keyword may later be used in multimedia encryption or type encryption in general. An example of a preamble that would be more depictive of what is occurring and make it so the claims were not missing a step would be "A system for generating a keyword that can be used for multimedia encryption".

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jacob F Bétit/

Examiner, Art Unit 2169

Conferees:

/Eddie Lee/

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